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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/687,048 | 10/13/2000 | Tae Heon Lee | AMKOR-052A | 1120 |

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EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/687,048

Applicant(s)

LEE ET AL.

Examiner

DiLinh Nguyen

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8-9, 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (figs. 1-2) in view of Okumura et al. (U.S. Pat. 5942794).

- Regarding claim 1, AAPA (figs. 1-2) disclose a semiconductor device comprising:
 - a plate type frame body 120 having an opening 125 at its center;
 - a chip paddle 110 disposed centrally within the opening of the plate type frame body;
 - a plurality of leads 130 extending inwardly in a lengthwise direction from the plate type frame body toward the opening, the plurality of leads being spaced at regular intervals about the perimeter of the chip paddle;
 - at least two tie bars 150 extending inwardly from the plate type frame body, at least two tie bars connecting the chip paddle to the plate type frame body.
- Regarding claim 2, AAPA (figs. 1-2) disclose a semiconductor device comprising:
 - a plate type frame body 120 having an opening 125 at its center;
 - a chip paddle 110 disposed centrally within said opening of said plate-type frame body, said chip paddle having a plurality of sides and corners;
 - a plurality of leads 130 extending inwardly in a lengthwise direction from said

plate-type frame body toward said opening, said plurality of leads being spaced at regular intervals about the perimeter of said chip paddle;

at least two tie bars 150 extending inwardly from said plate-type frame body, said at least two tie bars connecting said chip paddle to said plate-type frame body;

wherein the plurality of leads proximate each of the sides of the chip paddle include at least two outer leads and at least one inner lead.

- Regarding claims 8-9, AAPA (figs. 1-2) disclose a semiconductor package comprising:

a chip paddle 110, said chip paddle having an upper surface, a lower surface, a plurality of sides and corners (fig. 2);

a semiconductor chip 105, said semiconductor chip mounted on said upper surface of said chip paddle;

a plurality of leads 130 in electrical communication with said semiconductor chip and being spaced at regular intervals about the perimeter of and apart from said chip paddle;

encapsulation material 10, said encapsulation material enclosing the semiconductor chip, the chip paddle and the plurality of leads and leaving only the lower surfaces of the chip paddle and the plurality of leads exposed;

wherein the plurality of leads proximate each of the sides of the chip paddle include at least two outer leads and at least one inner lead.

However, AAPA (figs. 1-2) fail to disclose wherein the plurality of leads are of at least two different lengths and wherein the outer leads being of a first length and the

Art Unit: 2814

inner lead being of a second length, the first length and the second length being unequal.

Okumura et al. disclose a semiconductor device (fig. 6b, column 16, lines 55 et seq.) comprising :

a plurality of leads 23 are of at least two different lengths; wherein the outer leads being of a first length and the inner lead being of a second length, the first length and the second length being unequal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of AAPA to improve the reliability of the semiconductor package device, as shown by Okumura et al.

- Regarding claims 3 and 10, it would have been obvious matter of design choice to form the plurality of leads having a first length are longer than the plurality of leads having a second length.
- Regarding claims 4 and 11, Okumura et al. disclose the plurality of leads having a first length are shorter than the plurality of leads having a second length.
- Regarding claims 5 and 12, AAPA (fig. 2) disclose the chip paddle is substantially rectangular.
- Regarding claims 6 and 13, AAPA (fig. 2) disclose corners of the chip paddle are chamfered.
- Regarding claims 7 and 14, AAPA disclose the leadframe is adapted for use in an MLF type semiconductor package.

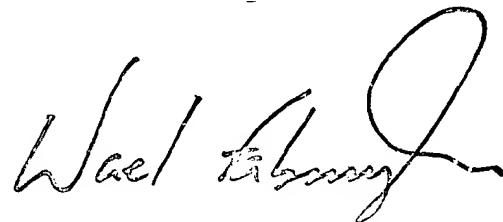
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
February 3, 2003

A handwritten signature in black ink, appearing to read "Wael Fahmy", with a stylized flourish at the end.

SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2800